THE EDUCATIONAL WEEKLY.

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THE MICHIGAN TEACHER, *Michigan.*
THE ILLINOIS SCHOOLMASTER, *Illinois.*
THE NEBRASKA TEACHER, *Nebraska.*
THE SCHOOL, *Michigan.*
HOME AND SCHOOL, *Kentucky.*
THE SCHOOL REPORTER, *Indiana.*

CHICAGO, THURSDAY, DECEMBER 13, 1877.

Editorial.

IN the northwestern corner of the territory of Wyoming, bordering on Montana and Idaho, lies a tract of country about fifty-five by sixty-five miles in extent, possessing a greater combination of remarkable features than any other known area of like dimensions under the sun. It contains 3,578 square miles. Its elevation above the sea level is from 6,000 to 14,000 feet. It lies mainly, but not entirely, on the east side of the main range of the Rocky Mountains. By an act of Congress, approved March 1, 1872, this tract was withdrawn forever from sale and set apart as a permanent pleasure ground for the amusement and instruction of the people under the designation of the YELLOWSTONE NATIONAL PARK. The grandeur and variety of its scenery, the salubrity of its summer climate, and the health-giving qualities of its thermal waters will, within a few years, make it the Mecca of the tourist, pleasure seeker, and invalid from all parts of the civilized world. Among its innumerable attractions are some of the grandest cataracts, cascades, cañons, and mountain summits on the continent. Its spouting geysers in number and magnitude exceed all others known. Its numerous mud-springs, solfataras, fumeroles, and beautifully terraced hot springs are beyond description in the magnitude and splendor of their decoration and action. The sources of the Columbia, the Colorado, and the Missouri rivers are all said to lie within this pleasure ground of the nations. Its mountain summits are covered with eternal snows, while many of the valleys are made radiant with the sparkle of lakes whose waters are clear as crystal.

The most magnificent of these lakes is the Yellowstone, the source of the river, lying nearly in the central portion of the park. Its form is similar to that of the human hand with the palm to the front and the fingers pointing downward. The altitude of the lake is 7,427 feet above tide water, and its present depth is about 300 feet. It is fed by the snows on the lofty mountains that flank it on all sides. The length of this beautiful sheet of water is about 22 miles, and the width ten to fifteen miles. Prof. Hayden declares that there is nothing on the continent that equals it in the brilliant hues of its waters and the splendor of its surroundings. The clear green shading of the mountain slopes, with the ultramarine tint of its shining surface, produces an effect upon the observer which can neither be imagined nor adequately described. The temperature is that of cold spring water. In the early part of the day its surface is usually calm, and its varied hues from livid green, shading off into a deep ultramarine, present a picture of beauty that is dazzling to behold. During the later hours a strong wind sometimes arises, stirring the calm surface into all the fury of an ocean storm. The amount of vegetation produced in the depths of Yellowstone Lake is immense, vast ridges of it lining the shores at certain seasons after a high wind has swept over the surface. The only fish found in the lake and in the neighboring streams is the trout, whose numbers are said to be inconceivable. Most of the fishes in the lake are afflicted with the presence in their bodies of a peculiar intestinal worm which for the time being renders them unfit for use. The presence of hot springs, with their cones rising above the surface, is a singular fact, the water within the cone being almost boiling hot. Trout have been caught by persons standing upon these cones and cooked in the hot waters, without being removed from the hook, as declared by the United States Geologist, Prof. F. V. Hayden.

But the most wonderful objects of interest in this region are the cataracts and cañons of the Yellowstone with the spouting geysers in the valley of the Fire Hole river, a branch of the Madison. Neither language nor the painter's genius and skill are adequate to describe either. The lower falls are more than 390 feet high. The walls of the grand cañon are some 2,500 feet in depth and are colored by hues so various and brilliant that human art despairs of any attempt to reproduce them. "The wealth of red and yellow, brown and orange, pink and green, black, gray, and white fascinates and bewilders every beholder," according to Prof. Marshall, "seeming to reproduce before his admiring gaze all the ravished splendors of every gorgeous sunset whose charms, no longer evanescent, are here not painted but dyed through and through these mighty cliffs, and made as eternal as the everlasting mountains they buttress." The geysers are even more grand and magnificent, because accompanied by much of the pomp and circumstance of elemental war in the spouting of immense columns of hot water to the height of 90 to 250 feet or more, in the shooting up of vast volumes of steam to an occasional altitude of 1,000 or 1,500 feet, and in the rumbling sound and vibrating motions that accompany the earthquake shock. There are three known geyser basins, but two of which have however been explored. These are in the valley of the Fire Hole already referred to, and lie to the westward of Yellowstone Lake from which they are reached by a tolerably well worn trail. Some of the orifices of the geyser cones are twenty feet in diameter, and during an eruption a column of hot water filling this orifice rushes outward and upward with terrific force and to altitudes varying from 15 to 275 feet in some cases. The cones, rims, and basins formed by the deposits from the springs and geysers are among the most magnificent of their attractions. Many of them have all the beauty of finish and

brilliancy of coloring of the finest porcelain, while the waters within the rims and basins of many of the springs are so perfectly transparent that the smallest objects may be seen at the depth of forty or fifty feet.

Our purpose in referring to the Park was not so much to attempt a description of its really indescribable wonders, as to call attention to the work of vandalism already inaugurated within it by tourists and visitors. Many of the magnificent structures built up by the action of the hot springs and geysers are being disfigured and destroyed by trophy-hunters and others, actuated, too often it is to be feared, by a pure love of destruction. This shameless raid upon the varied glories of the "Wonderland" should at once be stopped by the strong arm of the law. Congress ought promptly to take such action as will protect and preserve the decorations that nature for ages past has treasured up among these "everlasting hills" and in the radiant valleys of the upper Yellowstone. A resolution was passed at the recent meeting of the American Association for the Advancement of Science, calling upon our national authorities to act in this matter. It is a subject of quite as much interest to educators as to men of science, inasmuch as the Park may be justly regarded as a vast museum whose unlimited resources are capable of illustrating almost every object of thought, or subject of study within the range of created existences. Let our educators and friends of education, therefore, add their voices and votes to those of the scientists in the effort to preserve *from* desecration and for the high purposes of instruction, the grandest heritage of natural sublimity, beauty, and utility ever bestowed upon a nation.

THE COUNTER-CURRENTS OF HOME AND SCHOOL.

HAS any teacher the power to work miracles in changing bad habits of pupils into good ones? Yes, he is expected to do so in many cases by parents. All the duty and burden is thrown on the teacher by such parents, and no efficient coöperation is rendered nor attempted, day by day, even to lift the burden with one of their little fingers. It is a clear case of four against one —four hours out of school to every hour in school—or, deducting sleep, of sixteen against six hours. The teacher has done his utmost to teach, train, stimulate, polish, refine, in the matter of knowledge and deportment, but the pupil drops it all the moment he leaves the school-room, and thinks no more, cares no more, learns no more, till afternoon, and evening, and night, and morning have run their rounds, to 9 o'clock next day. The talk, the games, the evening papers, the reading, the associates in street or house, all are in a different world—the real world of the scholar until after many hours' forgetfulness of studies and intense interest in other things. The concert, the fair, the sociable, the neighbors' children, the horse, the store, the dog, the new game, absorb all the youngster's thoughts from the close of school to the opening of school next day. The father may or may not care to spend even ten minutes in examining the work of the preceding day or of the next day, if only let alone to read his evening paper, or to talk of business, or discuss household matters, or to go off to his lodge, or club, or amusement. The mother may not have physical strength to attend to any evening lessons of the older children, in addition to her heavy burden of the day in household cares or labors. No older brother or sister may be there to lend a hand, or have time to spare for a helping word. No one at home may be really qualified to give the aid required, at the right time. No good place for study may be provided or possible, nor does the child usually care if there is none. Day by day, so it goes. Why does the teacher not do more for that scholar? Because the parent does nothing to coöperate.

The long winter evenings are coming. Parent, will you deal squarely? Do your duty, or else cease to blame the teacher for not achieving greater results than really he, in his unaided power, especially if his best efforts are foiled and thwarted by your home customs and arrangements, is able to achieve.

With all your merits as a parent, you may be a mere critic and not a co-worker in any direct manner to the culture of your child's mental or moral nature, and yet may be quietly assuming the whole credit of his progress, or attributing it to the talents of the pupil as distinguished from the controlling power of the school. Perhaps you claim all the success as in some way directly due to you, when not a particle of it is really to be attributed to you. Be honest, and examine how far you have actually sown the seed of any good harvest in your child's mind or character, or supplied anything beyond physical wants to the child whose inmost soul you never have entered as a benefactor and illuminator. Look into it. It will startle some so-called parents to ascertain that they have not done as much for the culture of their offspring as the lower animals—the hen, the beaver, the bee—do for their young. So far from actually training the noblest powers, you may not even know what the young are studying, what they have really learned, what they thoroughly understand in any single branch of knowledge, any more than if they were the children of a stranger. The fact of seeing them at meal time, well-behaved, neat, and attractive; the fact of seeing them bring home and apparently study an armful of books; the fact of your examining and signing an occasional report, more or less favorable,—all this and much more may amount to very little. That parent who coöperates most thoroughly with the school methods, will find his sons and daughters repay his labors tenfold as the recipients of intellectual and moral benefits which no other being can equally bestow, and which the Creator ordained the parents exclusively to impart. If you succeed in this, your success is great and blessed. If you fail of all this, you are to blame, and you alone. All the teachers, and books, and apparatus must in some measure fail, if the family is the foe of the school. Is not that a common sense view? L. W. HART.

CHICAGO'S DANGER.

THE public display of persons arrested for alleged crime within the city seems to me calculated to foster rather than to arrest crime. Our police stations are upon public thoroughfares. The transfer of prisoners to the "Black Maria" is made near midday, upon the principal street, and in a manner calculated to attract the attention of idlers. The conveyance is allowed to stand for many minutes with its occupants exposed to the gaze of scores of people, many of them children. The sidewalk is sometimes almost obstructed by the crowd permitted to gather. Some of the lookers-on may be friends of the prisoners; if so, they should be required to take their leave of their friends within the station walls. Public morals would be served by a rear exit from the station house to the prisoners' van. To say nothing of the opportunity given by the public display for the interchange of words that burn into the soul of unreasoning childhood, the daily sight begets familiarity which blunts the sensibilities and hardens the heart. It is possible that among the occupants of the van there may be some who, in braving the public gaze, smother all

better impulses, and sink into despair of ever regaining position, the loss of which has been thus publicly announced. There may be innocent ones, borne down by the weight of shame, and who in this exposure lose self respect and with it all purpose to live above suspicion of wrong-doing

There may be others, who see in the crowd those whom they know to be more guilty than themselves, and the sense of injustice rankles in their breast to their own injury. The debased ones find no encouragement to better living. They are exhibited to the world, and they endeavor to live down to the reputation they have gained.

But it is of those outside of the van that I would write. Men and women, boys and girls of all ages compose the eager crowd, who are moved by curiosity to attend the free display of the transfer of those charged with crime from the Station to the Bridewell.

Our officials seem to have accepted the first couplet in Pope's Essay:

> "Vice is a monster of so frightful mien
> As to be hated needs but to be seen—"

forgetting the second,

> "Yet seen too oft, familiar with her face,
> We first endure, then pity, then embrace."

All those charged with the education of the young understand well the corrupting tendency of displayed vice. It is hard enough under most favoring circumstances, to bring children up to the higher plane of right-living. Temptations assail them on every hand. Some are unavoidable. Strength must be acquired to resist them. But when to the unavoidable are added those which might easily be shunned, the acquisition of sufficient strength is often a hopeless task. Trial is necessary to the development of true character, but no one needs to hunt for new trials. Enough will come into our daily life unsought to serve the needed purpose. Too much care can not be exercised in covering temptation from the sight of the susceptible child on trial. If those charged with public affairs will not consider the matter suggested in this article, let the friends of education bestir themselves.

A Friend to Children.

GRUBE'S METHOD.—I.

(Two Essays by Louis Soldan, Principal of the St. Louis Normal School.)

[The first of the following two essays is the same in substance as the one read before the St. Louis Teachers' Association in 1870. It has been republished since extensively in state and city school reports and educational magazines. It is presented here in a somewhat changed form, because the practical experience in the school-room has shown since what points of the method are in such harmony with established views as to require no further explanation, and what details need full comment and amplification in order to guard against such mistakes as are likely to creep in. In many respects I was guided by many inquiries on part of the friends of the method. I regret to say that I have not always been able to answer these questions as fully as I wished. I hope that my correspondents will find the desired explanation in the following new version of the old essay. I deem it my duty, however, to say in justice to Mr. Grube that the following pages are not in every respect a translation from his work as has been supposed by some. One gentleman has done me the credit to publish my essay over his own signature as a translation from Mr. Grube's work. It should be distinctly understood that the full credit for one and every idea contained herein belongs to Mr. Grube, but that he is not responsible at all for the many imperfections in the manner in which his thoughts are stated here. In a few instances only the writer has allowed himself to depart from Mr. G's ideas. The two essays are, may I be allowed to repeat, not altogether a translation, but rather an attempt to give a condensed account of the 160 pages of Mr. Grube's work.

The second essay was read before the St. Louis Normal School Association in 1876, when it appeared proper to supply the continuation of the course recommended by a method which had attracted the attention of many thinking educators of the land, from California (See San Francisco Report of 1872) to New Hampshire (See State Report of 1876). The second essay contains a recapitulation and continuation of the first essay. It presumes as little as its predecessor to *recommend*, but simply submits a new and important method to the thoughtful consideration of those who are interested in the matter.]

THE old, long-established method in arithmetic is calculated to teach the first four processes of addition, subtraction, multiplication, division, in the order in which they are named, finishing addition with small and large numbers, before subtraction is begun, and so forth. A more recent improvement on this method consisted in excluding the larger numbers altogether at the beginning, and dividing the numbers on which the first four processes were taught, into classes, or so-called circles. The child learns each of the four processes with the small numbers of the first circle (*i. e.*, from 1 to 10) before larger numbers are considered; then the same processes are taught with the numbers of the second circle, from 10 to 100, then of the third, from 100 to 1,000—and so forth.

Grube, however, went beyond this principle of classification. He discarded the use of large numbers, hundreds and thousands, at the beginning of the course, as others had done before him; but instead of dividing the primary work in arithmetic into three or four circles or parts only, *i. e.*, from 1 to 10, 10 to 100, etc., he considered each number as a circle or part by itself and taught it by a method that is to be set forth in the following pages. He recommended that the child should learn each of the smaller numbers in succession, and all the operations within the range of each number, before proceeding to the next higher one, addition, subtraction, multiplication, and division, before proceeding to the consideration of the next higher number. In order to guard against a mistake which has been made rather frequently, it should be stated that such examples only are considered to be within the limit of a number, and are to be taught in connection with it, in which a larger number than the one that is being considered does not appear in any way whatsoever. Thus, for instance, when the number four is taught, the teacher should exclude at the beginning addition and subtraction by fours, multiplication with 4 as one of the factors, division with 4 as the divisor, because these belong to a later and more advanced part of the course, since they involve in the sum, minuend, product, or dividend numbers beyond the limit of the one that is being considered. But all the examples that do not involve a higher number than four are illustrated and taught before passing over to the next higher number, five. Treating, for instance, the number 2, Grube leads the child to perform all the operations that are possible within the limits of this number, *i. e.*, all those that do not presuppose the knowledge of any higher number, no matter whether in the usual classification these operations are called addition, subtraction, multiplication, or division. The child has to see and to keep in mind that

$$1+1=2,\ 2\times1=2,\ 2-1=1,\ 2+1=2,\ \text{etc.}$$

The whole circle of operations up to 2 is exhausted before the child proceeds to the consideration of the number 3, which is to be treated in the same way. Why adhere to the abstract division of the work in arithmetic into addition, subtraction, etc., in the primary grade where these distinctions do not help to make the subject any clearer to the pupil? The first four processes are naturally connected, and will appear so in the untaught mind. If you take away 1 from 2, and 1 remains, the child, in knowing this, also understands implicitly the opposite process of adding 1 to 1 and its result. Multiplication and division are, in the same way, nothing but another way for adding and subtracting, so that we might say one operation contains all the others. "Every text-book of primary arithmetic professes to teach the numbers in some way or other," says Grube; "but to know a number really means to know also its most simple relations to those numbers, at least, which are smaller than it." Any child, however, who knows a number and its relations, must be also able to perform the operations of adding, subtracting, etc., for they are nothing but the expression of the relation in which one number stands to others. Each example shows what must be added to or subtracted from a number to raise it or lower it to equality with another, or, as in multiplication and division, it sets forth the multiple relation of two numbers. The four pro-

cesses are the direct result of comparing, or "measuring," as Grube calls it, two numbers with each other. Only when the child can perform all these operations, for instance, within the limits of 2, can it be supposed really to have a perfect knowledge of this number. So Grube takes up one number after the other, and compares it with the preceding ones, in all imaginable ways, by means of addition, subtraction, multiplication, and division. This comparing or "measuring" takes place always on external, visible objects, so that the pupil can see the objects, the numbers of which he has to compare with each other. The adherents of this method claim for it that it is based on a sound philosophical theory, and that it has proved superior in practice to the methods in use before its invention.

Some of the most important principles of this method of instruction are given by Grube in the following:

"1. (Language). We cannot impress too much upon the teacher's mind that each lesson in arithmetic must be a lesson in language at the same time. This requirement is indispensable with our method. As the pupil in the primary grade should be generally held to answer in complete sentences, loud, distinctly, and with clear articulation, so especially in arithmetic, the teacher has to insist on fluency, smoothness, and neatness of expression, and should lay special stress upon the *process* of solution of each example. As long as the language for the number is not perfect, the idea of the number is defective as well. An example is not finished when the result has been found, but when it has been solved in a proper way. Language is the only test by which the teacher can ascertain whether the pupils have perfectly mastered any step or not.

"2. (Questions). Teachers should avoid asking too many questions. Such questions, moreover, as, by containing half the answer, prompt the scholar, should be omitted. The scholar must speak himself as much as possible.

"3. (Class and Individual Recitation). In order to animate the lesson, answers should be given alternately by the scholars individually, and by the class in concert. The typical numerical diagrams (which, in the following, will continually re-appear) are especially fit to be recited in concert.

"4. (Illustrations). Every process and each example should be illustrated by means of objects. Fingers, lines, or any other objects will answer the purpose, but objects of some kind must always be presented to the class.

"5. (Comparing and Measuring). The operation at each new stage consists in comparing or measuring each new number with the preceding ones. Since this measuring can take place either in relation to difference (arithmetical ratio), or in relation to quotient (geometrical ratio), it will be found to comprise the first four rules. A comparison of two numbers can only take place by means of one of the four processes. This comparison of the two numbers, illustrated by objects, should be followed by exercises in the rapid solving of problems and a view of the numerical relations of the numbers just treated, in more difficult combinations. The latter offer a good test as to whether the results of the examination of the arithmetical relations of the number treated have been converted into ideas by a process of mental assimilation. In connection with this, a sufficient number of examples in applied numbers are given to show that applied numbers hold the same relation to each other that pure numbers do.

"6. (Writing of Figures). On neatness in writing the figures, the requisite time must be spent. Since an invariable diagram for each number will re-appear in all stages of this course of instruction, the pupils will soon become able to prepare the work for each coming number by writing its diagram on their slates."

It will appear from this that Mr. Grube subjects each number to the following processes:

I. Exercises on the pure number, always using objects for illustration.

a. Measuring (comparing) the number with each of the preceding ones, commencing with 1, in regard to addition, multiplication, subtraction, and division, each number being compared by all these processes before the next number is taken up for comparison. For instance, 6 is first compared with 1 by means of addition, multiplication, subtraction, and division,

(1+1+ etc. = 6; 6×1 =6; 6−1−1 etc. = 1; 6÷1=6)

then with 2, then with 3, and so forth.

b. Practice in solving the foregoing examples rapidly.

c. Finding and solving combinations of the foregoing examples.

NOTES ON THE PUBLIC SCHOOL SYSTEM OF LONDON.—III.

Prof. J. H. Hoose, Prin, State Normal and Training School, Cortland, N. Y.

SELECTIONS FROM GOVERNMENT INSPECTORS' REPORTS.

In order to give a better idea of what the inspectors do, I subjoin a few selections from a printed report which was handed to me in the office of the School Board in August, 1877. All these reports are printed, and thus become history and reference. These selections are made to show the conscientious care of the officers.

1. "CHELSEA SCHOOL, BLECHYNDER STREET, NOTTING HILL.

17th January, 1877.

"As I expected, the Master here has done all that was possible in the time with this rough class of boys, and in a temporary and most unsuitable building. The passes have increased more than 25 per cent. Special commendation is due to him for the admirable manner in which he trains his Pupil Teachers. The discipline and moral condition of the school are exceptionally good. The School Board have scheduled a site for new buildings for this school, and it is to be hoped that they will shortly be begun. A reduced grant ought to be paid next year if the present building is in use.

"W. E. Simpson and G. E. Lloyd, Pupil Teachers, have passed well in their standard examinations."

2. "MILL LANE, BRIXTON HILL.

Year Ended 30th November, 1876.

13th January, 1877.

"This school is in a good state of efficiency, and reflects much credit on Mr. Cullingford. The Writing is superior, and the Reading, Spelling, Arithmetic, and Grammar are very satisfactory. The Geography is rather weak, and the papers on specific subjects are, with few exceptions, poor and deficient in intelligence. The boys should have more practice in writing out what they have learnt. The discipline and organization are capable of improvement, but are probably as good as can be expected in premises of such limited area, and so inconveniently crowded with a superabundance of dual desks.

"E. Burnard has passed fairly, and A. F. Dudley well under the first standard. A. H. Strelley's name has been removed from the Register of Pupil Teachers serving in this school."

3. "ST. JOHN'S, LIMEHOUSE.

Year Ended 30th November, 1876.

3rd February, 1877.

"BOYS' SCHOOL,—Both discipline and teaching are excellent.

"GIRLS' SCHOOL.—This continues to be the most excellent girls' school in the district.

"INFANTS' SCHOOL.—This Department is in thoroughly good condition, and is worthy of mention by the side of the two Senior Departments.

"(Of Pupil Teachers) W. Foster, M. E. Knight, F. E. Harper, and A. Dungate, have passed well, and J. H. Watts, E. H. Knight, C. Allen, M. A. Moor, C. Marsh, and S. Foster, fairly under their standard; but W. Foster should attend to map-drawing, J. H. Watts to Grammar and Geography, and E. H. Knight to Composition. M. E. Knight and F. E. Harper are now qualified under their advanced standards specified.

"Mr. Wadeson will shortly have two Certificates."

4. "ORCHARD HOUSE PLACE, POPLAR.

"This school has passed a very unsatisfactory examination. The order, discipline, and instruction are imperfect. The staff is too small for the requirements of the school. Miss Wild and her Assistant have doubtless worked conscientiously, though not with much success."

5. "JOHN STREET, FULHAM.

23rd December, 1876.

"Reading and Arithmetic require more thorough attention. The first-class is

fairly intelligent, and has passed a satisfactory examination, but the rest of the school is not up to the mark. 90 were examined, and 72 per cent only passed. The boys belong to the roughest and most neglected class of a very low locality. The master appears to work hard, but the state of his health seems to me to be scarcely equal to the strain of so difficult a school.

"I am directed to state that a grant cannot be continued in the present building after the close of the current school year, as the premises are unsatisfactory."

6. "TURNER STREET, STEPNEY.

"BOYS' SCHOOL.—Very satisfactory.

"MIXED SCHOOL.—Excellent as usual.

"A. Forrest's (pupil) name has been struck off the examination schedule (above age for the grade)."

7. "FINSBURY SCHOOLS, ALLEN STREET, GOSWELL ROAD.

"BOYS' SCHOOL.—This school has passed a fair examination only in the elementary subjects. I attribute this very much to a somewhat weak and certainly insufficient staff. The Assistant Masters are untrained. Mr. Larter has produced fair results in the Third Standard, except in Arithmetic. Mr. Sibley should give his attention to teaching Reading more carefully. The Pupil Teachers lack power and energy. I am sure the Head Master has done all possible under the circumstances, and with another Assistant Master certificated and trained will soon bring the school into a high state of efficiency.

"INFANTS' SCHOOL.—This school is in a deplorable state of inefficiency."

8. "WERRINGTON STREET, ST. PANCRAS.

"BOYS' AND GIRLS' SCHOOL.—The discipline and general tone are excellent, and the results of the examination show that plenty of hard work has been done. The attainments of the scholars in Music, Drawing, Grammar, Geography, Literature, Animal-Physiology and French are such as to warrant these schools being classified as thoroughly good middle-class schools."

NOTES ON SALARIES OF TEACHERS.

The salaries are embodied in the quarterly reports under two heads: "Fixed annual amount on April 30, 1877, exclusive of grant, etc.", and "Total received during 1876 from all sources." I note from the quarter ended on the 23rd March, 1877.

Noting somewhat at random, and among the highest, it appears that head teachers receive as follows:

Francis Sheen, fixed salary, $650—total from all sources, $835. He held a 2nd class certificate, and had had three favorable reports from the inspector.

Henry Dalley, holding a 1st class certificate, and having had 20 favorable reports (20 years of experience) and who could teach full drawing, and who held 5 science certificates, received a fixed salary at $850—and received a total of $1,185.

Thos. Hopper, B. A., holding a 1st class certificate, having had 17 reports, (annual), able to teach two drawing subjects, and holding 23 certificates in special subjects received a fixed salary of $1,000, and a total of all his income, $1,460.

Miss M. Whittle, holding a 2nd class certificate, having had 9 reports, being able to teach 3 subjects in drawing, had a fixed salary of $530, and received in all, $1,115.

Miss E. Dallison, holding a 1st class certificate, having had 11 annual reports, able to teach the full drawing course, and holding 1 science certificate, received a fixed salary, of $605, and a total of $1,245.

Henry Lee, 1st class certificate—7 reports, full drawing, 7 science certificates, fixed salary, $100, total, $1,515.

George Collins, 1st class certificate, 16 reports, 3 drawing subjects, 3 science certificates,—$1,000, and total $1,560.

Miss Janet Simpson, 2nd class certificate, 6 reports, full drawing, 1 science certificate,—$500, and total $960.

Charles Spence, 1st class certificate, 12 reports, 2 drawing subjects, 1 science subject,—$1,000, and a total, $1,720. (Highest.)

Miss C. S. Bulcraig, 2nd class certificate, 1 report, 3 drawing subjects,—$450, total, $1,085.

John Hodges, Tower street, Seven Dials, 2nd class certificate, 3 reports, full drawing, 3 science certificates,—$1,000, and $1,060.

Wm. Dadds, Turin street, Bethnel Green, 1st class certificate, 14 reports, full drawing, 2 science certificates,—$1,000, and $1,605.

Miss E. F. Varnold, same school, 2nd class certificate, 6 reports, full drawing,—$500, and a total of $930.

—The story is told at the expense of a well-known Westfield church member, who had an earnest brother Christian visiting him the other day. The latter is not so demonstrative in his religious fervor as his host, and also is lame, so that he cannot kneel. The first morning of his visit he was asked to lead the family devotions, and, seated in his chair, began an earnest appeal to the throne of grace, while the family kneeled around. The host's son, a lad of five years fidgeted around on his knees for a minute or two, and finally shouted, "Stop him, mother, stop him! He don't know nothing how to pray. Let father show him."

AN ALLEGORY.

(For Christmas.)

THREE maidens sat in the sweet spring-time,
By the side of a laughing stream,
Whose ripples kept up a merry chime,
As they sparkled in many a gleam.

"O, this is a funny stream!" they said,
"For it laughs, and dances, and sings;
And can no more keep still in its pebbly bed
Than if it were gifted with wings!"

Glad, blithesome hearts had these maidens three,
And the wings might almost be theirs,
For their lives were pure as their brows were free
Of the soiling of worldly cares.

"Which of us owns the most beautiful hand?"
Said she of the golden hair;
"I'll dip mine down to the gleaming sand,
That the water may make it more fair."

The dark-eyed one, with the clustering curls,
Sought long for a strawberry red;
And she found it at last—"Now, look here girls,
I'll paint mine all rosy," she said.

But the dainty maiden, with dewy eyes,
Had a pretty notion yet,
For down at her feet, half-hidden, there lies
A sweet, fragrant violet.

And bending down, with her hand of snow—
So fair is it now to the eye,—
She plucked the flower as it nestled low,
And she bruised it, half with a sigh.

She bathed her hand in its fragrance rare,
Till the sweet, subtle perfume stole
From the martyr-flower who blessed her there,
And breathed in her very soul.

The green trees waved, and the warm breeze wooed
The bright, lovely maidens three;
The one with her hand from the crystal flood,
The one with hers dipped in the strawberry's blood,
And the one, who, blushing, so modestly stood,
As her violet, fair to see.

The beautiful hands lay there, side by side,
Awaiting the wise decree
That should say which one, that bright spring-tide,
Was the fairest of the three.
* * * * * *

A lone, weary wanderer came that way,
And breathed out a faltering sigh,
She drank in the picture, and fain would she stay
'Mid the loveliness there, and die.

They looked at the stranger in sad surprise;
They wondered from whence did she come;
The warm tears sprang to their beautiful eyes,
And they asked her of friends and home.

She owned to no home—no loving friend's hand
To smooth out her briery path;
But she drew to their side, that she might demand
Such comfort as God's creatures hath.
* * * * * *

Alas, for these beautiful maidens three!
And alas for the suppliant there!
The virtue of *Christ-loving charity*
In their careless hearts had no share!

They could *pity* the suffering—be sorry and sad;
They could *say* "Be ye warmed and fed;"
But that noblest thought came not to make glad—
"We will *give* of our daily bread."

Then up spake an angel of gentlest mien—
"No hand can *quite* beautiful be,
Whether rosy, or fragrant, or spotlessly clean,
Or faultless in form as ever was seen,
Unless it is *open*, to comfort and cheer
The sad ones whom God, in His great heart, holds dear."
"*Of my* SUBSTANCE GIVE *I unto thee!*"

MARY P. COLBURN.

SOUTH BOSTON.

—A party of vegetarians who were boarding at a water-cure establishment, while taking a walk in the fields, were attacked by a bull, which chased them furiously out of his pasture. "That is your gratitude, is it, you great hateful thing?" exclaimed one of the ladies, panting with fright and fatigue. "After this, I'll eat beef three times a day!"

Notes.

A GRAND international exhibition is projected in Italy for 1879. May America come forward more promptly and sincerely than in case of the French display next year.——The *N. E. Journal of Education* says that "the days of sophomoric hazing of freshmen are numbered in this country, and the college that cannot stop such practices has small right to a first class rank."——The salaries of the Philadelphia teachers have been reduced ten per cent. This makes a saving of $126,374 on the yearly estimate.——Of the reports of the county superintendents in Minnesota thus far rendered to the State Superintendent, eighteen refer to the text-book law with unqualified disfavor; five equivocally criticise and doubt; four favor it, while nearly all unite in declaring that thus far the law has produced results the opposite of those intended. Only four or five boards of county commissioners have shown any inclination to make provision for the payment of the price of the books. Nearly all the educators are opposed to the law, and no books are yet ready for delivery. We notice that Donnelly, the author of the scheme, has been returned to the Legislature this winter. Of course, another text-book struggle is imminent.—The subject of school libraries is occupying such a prominent position at present among our educational men that it is with pleasure that we are able to call attention to the first of several articles promised us by Mr. McCoun, the manager of Jansen, McClurg & Co.'s Library Bureau, which has become such a power not only in supplying but also in helping to build up and elevate the entire library interest of the Northwest.

LITERARY.—We are indebted to General Eaton of the Bureau of Education for a copy of the Congressional Directory for the Forty-fifth Congress, corrected to October 18, 1877. This Directory is published under supervision of the joint Committee on Public Printing, and contains over 160 pages of matter indispensable to members of Congress, government officers, and citizens having business relations with the government. It is also an excellent work of reference for all who would acquaint themselves with the organization of different departments and the duties of government officers. A brief sketch of the history of each member of the two houses is given in the alphabetical order of the states and territories. This is followed by a list of the standing, select, and joint committees of the Senate and House of Representatives, officers of the two branches and of their committees and the official reporters. Next come the officers of the Library of Congress and the government telegraph service; the attachés of the Executive Mansion, and of the different departments with their duties; the Southern Claims Commission; the United States courts; Foreign Legations in the United States; United States Legations abroad; Consulates, Consulates General, Commercial Agencies, and Consular Clerks; the District Government, Judiciary and Police; the Smithsonian Institution and the Corcoran Art Gallery. We are also treated to a diagram of both houses, with the exact location of each member; his boarding place in Washington, and his home post-office address, and, in fact, to every particular that can possess interest to the visitor at Washington or to a correspondent with any officer above and including the chief clerks of bureaus and departments. We have already found the Directory quite as useful in its sphere as Webster's Unabridged or Johnson's Cyclopædia.——The work advertised by Jansen, McClurg & Co. for several weeks in our columns, *Tales of Ancient Greece*, by the Rev. G. W. Cox, is, as we have said before, well worthy the attention of students and lovers of ancient history. One imagines himself a Greek while reading the beautiful and gracefully told tales as presented by Mr. Cox. The language of the author is poetic; his scholarship, as evinced by his language, is refined and finished. The book affords both entertainment and instruction, even to the most cultivated minds. Look here for the tales of Troy, "The Battle of the Frogs and the Mice," and all the other mythological and heroic tales of the superstitious and worshipful Greeks. ——The illustrated Christmas numbers of the *Publishers' Weekly* and the *American Bookseller* have both appeared, and are fine specimens of the publishers' art. The former contains 771 pages superbly illustrated, and the latter 562 pages. Many illustrations are the same in both, and both will serve their purpose admirably, in presenting the attractive features of the later holiday publications, and in cultivating a taste for fine art in the home.——The most useful and striking passages from Epictetus have been gathered together and published by Roberts Brothers, Boston, in a neat little volume of 150 pages, comprising about one-fifth of the whole of Epictetus. It is an abridgement of the translation of Mr. T. W. Higginson, and comprises one of the "Wisdom Series." It may be had of Jansen, McClurg & Co., Chicago.——Alfred L. Sewell, who was for six years publisher of the *Little Corporal*, which, before the disastrous fire that burned up so many noble enterprises in Chicago, attained a larger circulation than had ever before been enjoyed by any juvenile magazine in America, announces a new monthly publication to be called *Home Arts*. His advertisement appears in the columns of the WEEKLY.——The following new publications are announced: By D. Appleton & Co., The Anatomy of the Ivertebrates, by T. H. Huxley; The Ancient Life-History of the Earth, by H. Alleyne Nicholson; Elements of Geology, by Prof. Le Conte. By Jansen, McClurg & Co., Dora's Housekeeping, by the author of "SixLittle Cooks;" Apple Blossoms, a volume of poems, by Hattie Tyng Griswold. By J. B. Lippincott & Co., Biology, by Dr. Charles Letourneau; New Ireland, by Alexander M. Sullivan; Anthropology, by Dr. Paul Topinard. By G. P. Putnam's Sons, The Silver Country, or, The Great Southwest, by Alex. D. Anderson; The Flood of Years, by Wm. Cullen Bryant; Sorrento and Inlaid Work, by Arthur Hope. By Scribner, Armstrong & Co., Upper Egypt—Its People and its Products, by Dr. C. B. Klunzinger; Faith and Philosophy, by H. B. Smith; Political Science, by Dr. T. D. Woolsey. ——*The Flossy and Bossy Stories* just published by D. Lothrop & Co. are admirable little sketches for Christmas. Mrs. Margaret Hammond Eckerson, the author, has displayed peculiar skill in portraying the childish characters of "Flossy" and "Bossy," who are said to be two "really" little girls, the daughters of a "really" clergyman, who, in their parish visiting tours with their parents, contrive very ingenuously to betray the peculiarities of human nature. Price 75 cents. 15 illustrations.——*The Monthly Reader* for December is now ready—another gem. Send five cents to John L. Story, Boston.——The December number of the *Popular Science Mouthly* is unusually interesting to teachers.——A volume of biographical and critical sketches of "The Great Tone-Poets," edited by Mr. F. Crowest, is announced by John Church & Co. The papers include Bach, Handel, Gluck, Hayden, Mozart, Beethoven, Weber, Rossini, Schubert, Mendelssohn, and Schumann.

REVIEWS.

HARRIET *Martineau's Autobiography*. Edited by Maria Weston Chapman. (Boston: James R. Osgood & Co.)—Harriet Martineau was one of the most eminent of English women. Her autobiography gives a very interesting account of her life and work as estimated by herself. She seems to have been a singular child, surrounded by unloving and unsympathising persons, who failed to comprehend her capabilities, treating her after the manner of the "good old days" when children were supposed to have no rights and no feelings. Being a very delicate child, she was subject to a thousand childish terrors and fitful fancies utterly unknown to healthy children. She was lazy after the manner of ordinary children, hated to brush her hair, didn't want to get up in the morning, preferred to have some one else get the apples in winter, and in her lessons dreaded to use her dictionary. Taking everything into consideration, she must have been an exceedingly disagreeable child. At eleven she was sent away to school. Becoming very much attached to her school-master, her life was, perhaps, thenceforward a trifle happier, though here she had her grievances. At nineteen her favorite brother, just starting for college, advised her to write something and send it to the *Monthly Repository*, a Unitarian periodical. Her topic was "Female Writers on Practical Divinity." She took for her signature V, though as she now writes about it, she can remember no reason for its use. Her article appeared in the next number, and among the notices to correspondents a request to hear more from "V of Norwich." This appeared wholly unknown to any of her family. She spent her Sunday evenings with her eldest brother, who was now married. After they had talked awhile, he proposed to read something, and took up the magazine, happening to open to her article at once. He read awhile, commenting very favorably, until, as they wondered at her silence, she confessed the article to be her own. He finished it in silence, but when she was returning home, he said, calling her "dear" for the first time, "do you devote yourself to this, and let other women make shirts and darn stockings." That evening, she says, made her an authoress. Not long afterward she began her first work, "Devotional Exercises." She also began a "theologico metaphysical novel" but when about half done, became aware that it was excessively dull, and abandoned it. Many years afterward she burned it. This piece of work, two others, and a review are all that were not published, in the whole of her career. At the outset of this novel she discontinued the practice of copying, and ever afterward what she wrote at first remained unchanged. Authorship was not to her a matter of choice. She had not done it for amusement, for money, or for fame, but had rather been forced into it, because things needed to be said and she could say them. She always devoted her morning hours to her work. Sometimes she was

forced to work morning and night, but it was not her practice to write anything more serious than letters in the evening. She made no calls, but received visitors every day from two to four. Five times in her life she had occasion to publish what she fully believed would ruin her reputation and prosperity. The result, however, was very different from her anticipations.

She closes her life with a hint regarding her last illness, her views and beliefs respecting the future, and her last view of the world, closing with these words: "When our race is trained in the morality which belongs to ascertained truth, all 'fear and trembling' will be left to children, and men will have risen to a capacity for higher work than saving themselves, to that of 'working out' the welfare of their race, not in fear and trembling, but with serene hope and joyful assurance. The world as it is is growing dim before my eyes; but the world as it is to be looks brighter every day."

Thus we see this irritable, visionary child developed into a strong, noble character, notwithstanding the adverse circumstances which surrounded her. Her genius was varied and remarkable in every way in which it was developed, and was also singularly masculine in its characteristics. She was a poet, a novelist, a political economist, a theologian, and a journalist. The amount of work she accomplished during her life was wonderful. Few could have done it, and endured as she did all those years an amount of physical pain sufficient to have worn out an ordinary man.

From her life many valuable lessons may be drawn applicable to humbler walks in life. Perseverance, even under difficulties, will accomplish wonders for any one. Her life is published in two large volumes, rendered attractive by all the modern arts of book-making. The latter half of the last volume is taken up with "Memorials of Harriet Martineau" by Maria Weston Chapman. This review of her life by her friend leaves the reader with a pleasanter estimate of her socially than is gained by the perusal of the autobiography. The work as a whole is very interesting.

Ladies' Guide to Needle Work and Embroidery. By S. Annie Frost. Henry T. Williams, publisher, Boston. This little book would be a valuable accessory to any lady's library, and should be found on every work table. It contains full descriptions of the various stitches used in embroidery, crochet, etc., and any lady with a little knowledge to begin with, and what is called by some people "gumption," can, with the exercise of the patience and perseverance necessary to accomplish needle work of any kind, soon master all the different varieties described. There are beautiful patterns given with full description for performing the work, and the materials required in embroidery, braiding, appliqué work, canvas work, bead work, lace work, tatting, knitting, crochet work, netting, transferring, perforated card work, Persian rug work, patchwork, tambour work, and wire work. There is a valuable chapter on doll dressing that will be appreciated by all mothers who love to work for the pleasure of the little ones, and also by the ladies who get up fairs, etc. The volume closes with some illustrations of miscellaneous fancy work, full of good suggestions for beautifying home. The book has a neat appearance, and is in convenient shape for frequent reference.

PAMPHLETS RECEIVED.

EIGHTH *and Ninth Annual Report* of the Superintendent of Public Schools of Pittsburgh, for the years ending Sept. 1, 1876, and Sept 1, 1877. Geo. J. Lucky A. M., Supt. Schools.

Course of Study Pursued and Text-books Used in the Pataskala, O., Public Schools. Rules and Regulations Governing the Schools. Aug. 20, 1877. D. R. Thompson, Supt. Public Schools.

Third Report of the Board of Trustees of Public Schools of the District of Columbia, 1876–77. Chas. E. Hovey, chairman.

Course of Instruction and Rules and Regulations of the First Ward Public School, Sterling, Ill., August, 1877. M. H. Wood, Principal.

Eighteenth Annual Report of the Board of Education of the City of East Saginaw, Mich., for the year ending July 16, 1877. Horace S. Tarbell, Superintendent of Public Schools.

First Annual Catalogue of the Michigan Military Academy, 1877–1878. Orchard Lake, Oakland county, Mich. Major J. Sumner Rogers, Superintendent; Alfred Hennequin, M. A. Principal.

QUERIES AND ANSWERS.

ANSWERS.

[The answers are numbered to correspond with the "Queries" which have preceded.]

60. 4 per cent of 100 per cent = 4 per cent; 100 per cent − 4 per cent = 96 per cent. 5 per cent of 75 per cent = $3\frac{3}{4}$ per cent; 75 per cent − $3\frac{3}{4}$ per cent = $71\frac{1}{4}$ per cent; .96×.7125=.684; 30÷.684=43.8+.

Ans. 43.8+ yds.

30×9=270, the number of square feet to be lined; 3×.96=2.88 feet, the length of 1 yard of duck; $\frac{3}{4}$ yard = 2.25 feet; 2.25×.95=2.1375 feet, width of one yard of duck. Then 2.88×2.1375= area of 1 yd. duck, and of course R will see the remainder. It is from Robinson's Arithmetic, p. 262, as 71 is from Greenleaf's, p. 354, and 72 scarcely varied from p. 247. Are there no new ones? CEDAR.

71. Conceive a triangle constructed at the tops of the towers, an angle being at the top of each, and circumscribed about it the least circle that will contain it, and for the sake of brevity designate this triangle by A, and the triangle at the base of the towers by B.

The triangle A is isosceles, the base or greatest side being the distance between the tops of the towers of 30 and 50 feet in height, respectively.

It is evident that a ladder "to reach the top of each tower without moving the foot," must be placed at a point in the plane of the triangle B, where a perpendicular to the plane of the triangle A erected on the center of its circumscribed circle meets the plane of the triangle B. Designate this line by x, and the length of the ladder by y. To ascertain y five steps are necessary. (1) Given the distance between bases of the towers for the base, the difference in the heights taken in pairs, for the perpendicular of a right angled triangle, to find the hypothenuse or distance between the tops. Apply the theorem. "The square described on the hypothenuse of a right angled triangle is equal to the sum of the squares described on the other two sides," whence the base proves to be 200.9975+ feet and each of the other two sides 200.2498+ feet. (2) Given, one-half of the base of the triangle A for the base, and either of the other two sides for the hypothenuse of a right angled triangle, to find the length of the perpendicular let fall from the vertex of the angle opposite the longest side on that side. Apply the same theorem as in (1), which shows its length to be 173.20508+ feet, which designate as L. Conceive this perpendicular line produced till it meets the circumference on the side opposite the bisected angle, and call the produced line D; then the diameter may be designated as C + D. (3) Given two chords,—the base of the triangle A being one and C + D intersecting it, the other, to find D. Apply the theorem. "When two chords intersect each other in a circle, the rectangle contained by the segments of the one will be equivalent to the rectangle contained by the segments of the other." D is thus found to be 58.31237+ feet. C + D, 173.20508 feet + 58.31237 feet = 231.51745 feet, and the radius one-half of 231.51745 feet, or 115.758725+ feet. (4) The radius found in (3) is the length of the base, the line x the perpendicular, and the line y the hypothenuse of a right angled triangle, right angled when the radius and the line x meet. To find x take the triangle formed by making the distance between the towers of 30 and 50 feet a base, the distance between their tops, the hypothenuse, and the difference in their height, the perpendicular of a right angled triangle; and the triangle so formed is similar to that formed by making the vertical distance of the two planes A and B midway between the 30 and 50 feet towers, the perpendicular, the line x, the hypothenuse, and the distance between the points when these two lines meet the plane B, the base of a right angled triangle. Apply the theorem. "The sides about the equal angles of equiangular triangles, taken in the same order, are proportional and the triangles similar," and we find x = 40.1995+ feet. (5) Given, the base = 115.758725+ feet, and the perpendicular = 40.1995+ feet to find the hypothenuse or y. Apply the same theorem as in (1) and we find y, or the length of the ladder =122.541+ feet. A.

Let x = perpendicular,
200 − x = hypothenuse,
$x^2 + 10000 = (200-x)^2$,
$x^2 + 10000 = 40000 - 400x + x^2$,
$400x = 30000$,
$x = 75$ = distance tree broke from ground.
200−75 = 125 = hypothenuse.

WM. D. P. LOWRY.

72. The tree breaking forms a right angled triangle, with a base of 100 feet, and the sum of the perpendicular and hypothenuse 200 feet. The following rule will solve the example: From the square of the sum of the perpendicular and hypothenuse, subtract the square of the base and divide the remainder by twice the sum of the perpendicular and hypothenuse; the quotient will be the perpendicular.

This example is susceptible of another very nice solution:

(1). $h^2 - p^2 = 10{,}000$,
(2). $h + p = 200$,
∴ (3). $h^2 + 2hp + p^2 = 40{,}000$,
(3)−(1)=(4). $2hp + 2p^2 = 30{,}000$,
(4)÷ $2p$=(5). $h + p = \frac{15{,}000}{p}$,
(5)−(2)=(6). $200 = \frac{15{,}000}{p}$,
∴ (7). $p = 75$, D. W. MILLER.

Let x = distance from ground it was broken off.
a=200 feet and b=100 feet. Then,
$x^2 + b^2 = a^2 - 2ax + x^2$, (1).
$2ax = a^2 - b^2$, (2).
$x = \frac{a^2 - b^2}{2a}$ (3).
Substituting the value of a and b in (3), we have
$x = \frac{3000}{400}$, whence, (4).
x=75. [*Ans.*

The Educational Weekly.

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Educational News—Home and Foreign: Henry A. Ford, Kalamazoo, Michigan.
The East—Prof. Edward Johnson, Lynn, Massachusetts.
Musical Department—Prof. W. L. Smith, East Saginaw, Mich.

CHICAGO, DECEMBER 13, 1877.

Minnesota.

We have been furnished the following from the County Supterintendent of Steele county: The whole number of scholars entitled to apportionment in the county is 3,103. Of these 723 were enrolled in the schools in Owatonna, leaving 2,380 in the district schools. There were 73 district schools last year, thus giving an average of 33 pupils nearly to a district. The number of teachers of each sex in each term was, winter, males 34, females 31, total 65; summer, males 7, females 48, total 55. The average monthly wages of male teachers was $35, females $27. The present number of districts is 75, school houses 71. The number of different teachers employed during the year was 125, of which 39 were males and 86 females. Number of certificates granted during the year, 1st grade none, 2d grade, males 17, females 33, total 50. Number males 21, females 28, total 49; 3d grade, of applicants rejected 28.

Indiana.

FOUCAULT'S EXPERIMENT.

The approaching destruction of the venerable State House of Indiana has afforded a fine opportunity for the repetition of this famous experiment on a grand scale. The dome of the capitol rises 125 feet in the clear from the floor. The first and greatest difficulty encountered was in scaling the dome and suspending the wire. This feat was accomplished by the firemen under the direction of the assistant chief. After reaching the top, a hole was cut into the lantern, from which, after some destruction of lath and plaster, a hole was made in the very apex of the dome. From this point a piano wire was extended to the floor. For a weight, a 56 pound cannon ball was procured which was provided with a ring by which the wire could be attached, and with a pointer upon the opposite part. The deviation of the path of the pendulum should be, for the latitude of Indianapolis, 9.6° per hour. Six hours' vibration showed a deviation of 60°, a little more than the theory calls for. The excess of deviation is accounted for by the slightly elliptical motion of the pendulum, which thus far it has been found impossible to overcome. The experiment has been conducted somewhat publicly and not under the most favorable conditions for perfect success. It is proposed, however, to continue it more privately in the hope of securing more satisfactory results. The credit of this enterprise, from its first inception, is wholly due to Mr. E. F. Brown, teacher of mathematics and astronomy in the Indianapolis High School, whose energy in overcoming apparently insurmountable obstacles in the case is worthy of all praise.——The *science*, or rather the *dissecting* room of the Indianapolis High School, which is under the tasteful, or rather smellful management of Alembert W. Brayton, formerly of the Cook County Normal School, ranks high among rooms of its class. In fact, it is about the rankest room in Indianapolis, if we except certain rooms connected with our numerous medical colleges, where the devotees of human anatomy hold nightly orgies. Mr. B. the other day found the following "little classic" upon his blackboard, and affectionately dedicated to himself;

"Go where I have gone,
And feel what I have felt,
Go to the science room
And smell what I have smelt."

Purdue University.—On Wednesday, Nov. 21, Purdue dedicated University Hall. This building is 154 feet in length by 76. It will contain the geological and zoölogical cabinets, the library, the president's room, the chapel, several recitation rooms, society halls, etc., etc. It is first-class in every particular, being constructed upon the most approved model and furnished with all modern conveniences. The dedicatory exercises were participated in by Gov. Williams, ex-Governor Hendricks, President Moss, of the State University, Prest. Jones, of the State Normal, and many other prominent men of the state. President White's administration is bringing popularity and success to this institution, which has hitherto been struggling up through a number of untoward influences.——Indiana has at last established a School of Art at its capital. This institution, which is wholly a private enterprise, is under the direction of Prof. Gookins, formerly of Terre Haute, and more recently of the Chicago Art School. It has been in operation about six weeks, is well provided with models and other appurtenances, and is meeting with an encouraging amount of patronage.——Judge Coffreth has resigned his position as president of the board of trustees of Purdue University. Want of time to attend to his duties as a trustee of the institution is the cause of his resignation.

Illinois.

Pope county has a monthly institute in good working order. We have received the programme for the December meeting. It will be held the 15th, at Golconda. We notice that practical questions are to be discussed.——Things seem to be approaching a crisis at Springfield. At the last meeting of the Board of Education a preamble and resolution were introduced which are substantially as follows: The former recites that the Board submitted its estimates to the city council calling for $43,516, to meet the necessary expenses for the current year; that the city council refused to levy this amount, and reduced it to $30,000; that the school debt and interest due December 1, and still unpaid, is $10,163; that there is now due for salaries and supplies $9,938; that the levy made by the council will not yield more than $20,000; that the board because, of a recent decision of the Supreme Court, is enjoined from making loans or issuing certificates of indebteness; that there is a prevalent and increasing disposition on the part of taxpayers to evade the payment of legal taxes; therefore, be it

Resolved, That all the city schools shall be closed at the end of the present term, December 21, 1877, and remain closed until sufficient funds are furnished by the proper authorities to carry them on in a lawful manner, and that all salaries paid by this board are hereby suspended during said time.

Resolved, That the Superintendent of City Schools is hereby directed to see that the purposes of the above resolutions are fully executed.

On motion, the further consideration of the preamble and resolution was postponed until the next meeting.

Surely the above is an unfortunate conditionof things. It is to be hoped that some arrangement may be made by which the children of Springfield will not be obliged to spend the rest of the year upon the streets. The gravest fact is that if the schools are to be closed the year will be irretrievably lost to a majority of the pupils. It means so much withdrawn from the preparation for the varied duties of life.

TWENTY-FOURTH ANNUAL SESSION OP THE ILLINOIS STATE TEACHERS' ASSOCIATION TO BE HELD IN THE STATE HOUSE AT SPRINGFIELD, DEC. 26, 27, & 28, 1877.

Wednesday Evening, Dec 26.—8:00 P. M.—Address of Welcome, by Governor Cullom; President's Annual Address; Appointment of Committees.

Thursday, Dec. 27.—9:00 A. M.—Discussion.—Should our High Schools give instruction in the elements of Political Economy? A. M. Brooks, Springfield, J. H. Blodget, Rockford, R. A. Edwards, Rock River Seminary. 9:45 A. M.—Discussion:—What can be done to develop in our Students a higher taste for English Literature? J. H. Ely, Mount Carroll, H. L. Boltwood, Princeton. 10:30 A. M.—Paper:—Manners and Morals in our Schools. J. W. Bailey, Lake Forest University. 11:00 A. M.—General Discussion:—Best methods of teaching Spelling. 2:00 P. M.—Reports of Committees appointed at the last meeting of the Association. 2:30 P. M. Public High Schools. J. M. Gregory, Illinois Industrial University, Newton Bateman, Knox College. 3:30 P. M.—Discussion:—What can be done to make our pupils speak better English? O. E. Haven, Evanston, John T. Ray, Oregon. 7:30 P. M.—Lecture:—Upper Schools necessary to elementary instruction. James McCosh, Princeton College, New Jersey.

Friday, Dec. 28.—9:00 A. M.—Discussion:—How shall our County Superintendency be made more effective? Robert Allyn, Southern Illinois Normal, S. M. Etter, Springfield, R. Williams, Ottawa. 10:00 A. M.—Discussion:—Do we have too many examinations? C. I. Parker, Chicago, E. A. Gastman, Decatur, P. R. Walker, Rochelle. 11:00 A. M.—General Discussion:—What should be taught in our Primary Schools? 2:00 P. M.—Paper:—The Education of Women. J. L. Pickard, Chicago. 2:45 P. M.—Paper:—Sap. S. H. Peabody, Chicago. 3. 30: P. M.—Paper:—Public Schools and Public Morals. A. A. Kendrick, Shurtleff College.

Remarks.—The meeting of the Association will be held in the Hall of Representatives, in the new State House.

Hotels have reduced their rates to the following figures: Leland, $3.00, $2.50, and $2.00 per day, according to location of rooms; St Nicholas, $1.50; Revere, $1.25; Cheney, $1.25. The rooms of the Executive Committee will be at the Leland.

The Chicago & Alton and the Illinois Central Railroads will return members of the Association at one-fifth fare. Arrangements are being made to secure the same reduction by other roads.

N. C. Dougherty,
E. A. Haight,
J. H. Freeman,
Executive Committee.

Missouri.

OUR Supreme Court is called upon to decide whether the appropriations for the normal schools are meant for calendar or school years. It is a matter of $5,000 to each school. As neither year was mentioned in the act, the question will hinge on whether or not the Court desires to cripple these schools. Our normals are gradually making friends. Never have they been so prosperous. Nearly 800 students are now in attendance.——A new feature in the way of education has been added to S. E. Mo. A district association is to be held at Piedmont during the coming holidays. An extended programme is already provided for, so we may look for an interesting time. A plan is on foot to make the meeting an annual affair.——Mr. C. W. Stephenson writes from Warrensburg some very encouraging things. I enclose:—

WARRENSBURG NORMAL ITEMS.—This year, Prof. Osborne has set aside Thursday afternoon for literary work. At this time, all lessons are suspended, and the pupils meet in their respective rooms for the purpose stated. These Thursday afternoon duties are made a part of the school work and the same penalty for failure in lessons is applied here. The exercises consist of readings, recitations, essays, and in the higher rooms, debates. In the matter of preparation, so far, the plan has been eminently successful. There is a growing emulation among the students, and of the right kind. The year's work will, we think, show a marked improvement, and the general culture of each student be more widely extended. This also makes a very pleasant variation from the solid studies. In Prof. Campbell's division of the "Normal Society," embracing every member of the school, we have, fortnightly, a summary of "general news," the latest "literary notes," and "scientific notes." Each of these heads is conducted by a single pupil, who, after a few efforts, becomes familiar with his duty and can, without extra trouble, afford a pleasing paper. This is an important item in literary work, as students are in this manner informed of the world's work without sacrificing the time of their studies. The increase in attendance this year has made it necessary to furnish the old "Assembly Room" with desks. There are about seventy students now seated in it. The Philomathean society, while it feels, very sensibly, the loss of the last class of advanced graduates from its roll, is doing well. Its old members, having grown attached to it, are doing their best work; the new ones, catching the enthusiasm of the others, are far from laggards. The "Normal Casket," a paper edited by the members, has been, this year, a most interesting feature. An evidence of the success of the Philo. is, that at the last meeting the room was crowded with visitors and students not members. All the advanced graduating class of June, '77, with one exception, are teaching in good positions. Our library of general literature will be at hand by the holidays. Mr. W. T. Williams will return the last half. He is now teaching near his old home. Miss Medora Hedges will also return for the last half of the year. She will complete the course. John Bradley, another of our earnest students, is teaching near Elmwood, Saline county, in this state. He will return for the last quarter. Florence and Lucy McFarland, graduates of our Elementary course, are now teaching in California. W. W. Torrence is now studying medicine in Hoopeston, Ill. Chas. Hawkins, who resides in Warrensburg, has not returned this year, but we hope yet to welcome him.

CAPE GIRARDEAU, Mo., Dec. 10.

Iowa.

THE Davenport School Board has employed Prof. St. Clair to give the teachers of that city lessons in vocal music.——An exchange says there is trouble in Bellevue public schools about religious exercises.——Two of the members of the Grinnell School Board are ladies. That is sensible. The schools of Grinnell, under the good management of Prof. Hart, are among the best in the state.——*The Vinton Eagle* says: "Prof. B. L. Cozier has been superintendent of the Mt. Pleasant city schools for nine years, which shows that there are men of sense on the board of directors at that place."——The public schools of Franklin county cost $51,000 last year.——Prof. M. L. Newton is principal of the LaPorte schools.——The lecture delivered by Dr. Middleton at the opening of the Medical Department of the Iowa State University has been published in pamphlet form.——Seven of the ninety-nine county superintendents, whose terms commence Jan. 7, 1878, are ladies. They are as follows: Miss S. Blackburn, Benton county; Miss E. E. Frink, Cedar county; Miss J. Kellogg, Decatur; Mrs. M. Mayfield, Jasper; Mrs. W. L. Parker, Osceola; Miss E. S. Cooke, Warren; and Miss N. Springer, Washington.——There are 73 independent and four sub-district schools in Henry county, County Supt. Palm is strongly in favor of township districts. The present system has caused endless confusion and annoyance. The sooner a better one is substituted the better the people will be pleased.——Mr. Thomas Hardie of Dubuque has been elected by the Regents of the State University a member of that body, to fill the vacancy occasioned by the resignation of Judge Adams. The appointment is a good one. We hope the Legislature will have the good sense to ratify the choice of the Regents.——The popular and efficient Supt. of the Lee county schools, Mr. Wm. J. Medes, and Miss Kate T. Hagny were married last week. If the good wishes of hosts of friends can add to their happiness, life with them will ever be sunny.——The teachers of Jackson county are about to organize a county teachers' association. Such an organization, properly managed and conducted, will be of great benefit to the teachers and through them to the schools of the county.——Knoxville has built two fine school buildings this year. Monticello has just completed a fine one at a cost of over $11,000.——State Supt. von Cœlln has prepared a list of changes in the school laws of the state, which he will recommend forcibly to the Legislature as the result of his long experience and observation as an educator, and, as he is a red-headed man, it is safe to conclude that something will be done. His object is to harmonize the laws, which are now ambiguous and often contradictory. An effort will also be made to secure a law establishing a uniform course of study for graded schools in the state, thereby obviating the difficulties experienced by people removing from one place to another. It is not intended to fix text-books at all, but to secure a uniformity of subjects in the several grades throughout the state.

Wisconsin.

MEETING OF COUNTY AND CITY SUPERINTENDENTS, *Thursday P. M., Dec.* 27. What means can we employ to make the work of the Common School Teacher more fruitful in good results? D. D. Parsons, Richland county, J. T. Lunn, Sauk county. Records and Reports of Schools and School Officers, C. M. Bright, Waupaca, W. A. Walker, Manitowoc. A Uniform Course of Instruction for the Cities of the State, C. W. Roby, LaCrosse. Uniform System of Examination of Teachers throughout the State, M. S. Frawley, Dane, Frank P. Chapman, St. Croix. County Teachers' Meetings and Associations, Fred. W. Isham, Walworth. How to secure the Coöperation of School District Boards with Co. Supt., S. M. Seete, LaCrosse.

Principals' Meeting, Friday P. M., Dec. 28.—Powers of Principals over their subordinates. W. H. Beach, Beloit. Relations of University to High Schools, S. Shaw, Madison. A Few Problems Relative to High Schools, J. Q. Emery, Fort Atkinson. Course of Study for City and Village Schools, Albert Hardy, Milwaukee. Where Shall High Schools be maintained? R. W. Burton, Janesville. Uniform Report for Graded Schools, L. D. Harvey, Sheboygan.

The South.

THERE are 1,772 pupils in the colored schools of Mobile, and these schools are said to be in excellent condition and very serviceable.

"One of our reporters had occasion to visit Owen county, Ky., the scene of some of the recent lawless acts, and was astonished at the low state of education in that section. School-houses are some evidence of the interest of a community in education, and those of that section of Kentucky are a disgrace to a civilized and intelligent state. Crime will not all disappear with ignorance, but the safety and happiness of any people will increase with their intelligence and culture.—*Chicago Inter-Ocean.*"

Kentucky is receiving a good many notices of that kind, and while the Northern Republican papers take pleasure in pointing out our defects in an offensive manner, yet there is a good deal of truth in their remark. Kentucky needs more school-houses, and will only have them when public sentiment demands them as a means not only for the culture of the people, but as powerful agencies for the extirpation of idleness and the transformation of our whole population into industrious producers. The tax-payers of this state pay millions as the cost of crime. One-half the sum thus disbursed, spent in the erection of good, comfortable school-houses and the permanent employment of good teachers wherever a hundred children could be gathered together, would most assuredly minimize crime throughout the state and make the present generation grow up in the belief that swaggering swashbucklerism and promiscuous shooting are not only disgraceful vocations, but remand the people who practice them into a state of savagery.

Thorough common-school education implies mental discipline, a brain in order, and prepared for intellectual effort. *Qualified teachers* are therefore a necessity for white and colored schools, and both qualified teachers and abundant school accommodations must be furnished by the people of this state, if they don't want branded upon them Carlyle's "They have a torch for burning, but no hammer for building." If we do not apply new remedies we must expect new evils. Reform, like charity, must begin at home. Society's character is determined by that of the individuals composing it. Individual character must therefore be reformed. There is no better way to do it than to begin with children. The common school provides the machinery. —*Louisville Courier-Journal.*

—A Colored Educational convention of North Carolina was held in Raleigh recently. The Committee on Resolutions reported a series of resolutions, stating that the time had come for the colored people to think and act for themselves, and to assume the task of molding their own destiny as citizens of the American Republic; and that education, morality, and industry must constitute the basis of their elevation and prosperity as a people; that notwithstanding the many obstacles and evils with which they are compelled to contend in their present condition, they felt cheered and encouraged by the signs of the times; the disappearance of race prejudice in the state, and the growing sentiment of friendship and confidence between the races, the obliteration of the "color line," are in the highest degree gratifying to all lovers of progress and peace; that the colored people appreciated the efforts of the state press, and the action of the state Legislature and state Executive in providing more ample and efficient means for the education of the colored people of the state. The last resolution was warmly discussed, and finally defeated; but one of somewhat similar meaning was afterwards introduced and passed. The convention is said to have been composed of active, intelligent, and earnest men, but the white people complain of the apparent spirit of partisan politics that controlled it.

Practical Hints and Exercises.

CLASS TACTICS.

Prest. J. BALDWIN, Kirksville, Mo.

I. Calling classes.
1. Ready.
2. Rise.
3. Pass.

1. *Ready.* Before giving this signal, the teacher may name the class. This will not be necessary after all become familiar with the programme. Each member of the class instantly takes a position ready to rise.

2. *Rise.* All rise at the same instant, and each turns in the direction he is expected to move. It is understood that each pupil steps into the aisle on rising.

3. *Pass.* Quietly and quickly all pass to recitation seats, or to places at the board. Below the high school; classes will generally pass directly to the board. The teacher will plan so as to avoid all confusion. At the board each stands facing the teacher and awaits orders.

4. *Remarks.* (1) In the same way move the class from recitation seat to board, omitting the first signal. (2) Some teachers move their classes by calling their pupils one by one, thus wasting precious time and showing a great lack of management.

II. Class symmetry.
1. (Position.)
2. (Straight lines.)
3. (Stand erect.)

1. *Position.* Place the tallest in the middle of the class, and others each way according to height. The reverse order is equally good. You secure symmetry and each pupil always knows his place. Since "turning down" has been abandoned, this arrangement is being generally adopted.

2. *Straight lines.* By this is understood that pupils shall stand in lines parallel with the boards. It requires tact to train pupils to keep this position. Avoid the mistake of constantly telling. *Manage.*

3. *Stand erect.* No longing must be permitted. Appearance as well as health require the erect position. Have your pupils always stand and sit erect, and it will soon become to them a habit of great value.

III. Board Tactics.
1. Board.
2. Erase.
3. Attention.
4. Write, etc.

1. *Board.* All turn to the *left*, to be in position to erase or write. Train all to turn quietly, quickly, and gracefully.

2. *Erase.* This signal may include the first. When facing the teacher, it means to turn to the board and erase. The eraser is pressed on the board and drawn down, thus avoiding dust. There should be an eraser for each pupil in the class, and a trough beneath the board for crayon and erasers. At the signal, *Board and erase*, pupils pass from recitation seats to board, and erase.

3. *Attention.* All instantly turn to the *right*. No one must wait even to finish a figure. All face the teacher and await orders.

4. *Write, solve, etc.* Before beginning the work, the class will usually be divided into sections of two or more each, and work assigned accordingly. The signal given will depend upon the work to be done.

5. *Remarks.* (1) The skillful teacher uses the board almost constantly. (2) Lack of system in board tactics is a very common fault. Confusion, dilatory movements, and waste of time are the results. (3) A green boy in charge of a regiment, and a stupid teacher in charge of a class, are ridiculous and pitiable objects.

IV. Concert Tactics.
1. Class.
2. Division, etc.
3. Boys, girls, ladies, and gentlemen.
4. Ones to twos; twos to ones.

1. *Class.* All answer. In general exercises of the entire school substitute *school* for class.

2. *Division one, etc.* The school and the classes are prepared into several divisions. The division called responds. *Section* is the signal when a particular section is called.

3. *Boys, girls.* Sometimes it has a good effect to call on the boys and girls to answer in turn. *Ladies, gentlemen*, are signals used for advanced classes.

4. *Ones to twos; twos to ones.* It is an excellent device to divide a class into sections of two each. At the signal, *ones to twos*, the ones recite to the twos, as directed by the teacher. Much individual work is thus secured.

5. *Remarks.* (1) No one must answer unless called *individually*, or designated by one of the *concert* signals. (2) The running fire kept up between a *random* teacher and his class is absurd enough. (3) Avoid much concert work. Use it for spice and drill, but do not rely upon it. (4) Let concert answers be given in a low, distinct tone. Nip all tendencies to sing-song.

V. Dismissing classes.
1. Ready.
1. Rise.
3. Pass, or seats.

1. *Ready.* The board will be cleared before this command is given. As this signal is never given except when the pupils are about to move, no misunderstanding can occur. If at board, the pupils deposit crayons and erasers and turn in the direction to move; if at seats they prepare to rise.

2. *Rise.* The pupils rise and turn. If the class is at the board this order is omitted.

3. *Pass, or seats.* In dismissing a class, *pass* is always used; in sending the claas from boards to recitation seats, *seats* is the signal. The order of passing will be so arranged as to consume the least time and produce no confusion. Some teachers have the pupils stand after passing to desks. At the signal, *seats*, all take seats at once.

To young teachers. By a few hours patient study and a few weeks careful practice, you may *master* this system of tactics. Soon you can work vigorously and easily, and you will find that you have almost doubled your efficiency as a teacher.

SKETCHES OF LESSONS IN PRIMARY READING.—FIRST YEAR.

Miss ISABEL LAWRENCE, State Normal School, Whitewater, Wis.

SKETCH IV.

NOTE.—Sketches are the skeletons of the lessons. The individual teacher must supply flesh in the form of variety and spirited work, or the lesson will lack life, however correct may be the questioning.

The sketch is the back bone—the system. The life comes from the teacher, and must be original with her.

Object.—To cultivate perception, conception, and language.

Point.—To teach words *this* and *is*.

Matter.—This is a mat. This is the rat. Is this a hat? Is this the cat? Other similar statements.

Method.—Tr. presents the objects, if convenient. Point to any object you please, and state its name. *Ch.* This is a mat. *Tr.* prints the sentence on the board. *Ch.* read, always pointing to the mat, or *making the sentence true.* If *Ch.* fail to emphasize *mat*, *Tr.* asks—*What* is this? *Ch.* This is a *mat.* *Ch.* select the word *this.* Drill on that word apart from the sentence.

Tr. Take this hat and ask me if this is a hat.

Ch. Is this a hat? Drill as upon previous sentence, leading *Ch.* to notice the difference between *this* and *This*.

Similar, for remainder of matter.

Treat *is* and *Is* in the same manner as *this* and *This*, apart from the sentence.

NUMERAL FRAME.

THE Greek school-boy learned to write and draw on a board strewn with sand, on which marks were made with a *stylus*, or sharp-pointed stick. The board was called an *abax*. For arithmetical calculations, the board was used without sand, and the calculations were performed by means of counters. These counters were pebbles, beans, or coins. Pythagoras, the great arithmetician, it is said, hated beans, and as coins were costly, pebbles were commonly used.

The Romans learned the use of the *abax* or *abacus*, as called by them, from the Greeks. They used pebbles as counters; hence the word calculate, from *calculus*, a little stone.

The counters were arranged in parallel rows horizontally across the board, as well as in vertical columns, thus:

∴ . ∴ = 314.
. ∴ ∴ = 135.

The first row represented the number 314, the second, 135. The first column at the right represented units, the second tens, the third hundreds, etc. The decimal system of counting was known to the Egyptians, the Assyrians, the Greeks, and the Romans, but the Egyptians were not acquainted with the use of the abacus. The Chinese have used the numeral frame or abacus, strung with wires, with glass or wooden beads as counters, nearly in its present form, for ages. It was doubtless invented by them, whence it passed westward through India and Arabia into Europe.

The accounts of the kings of Europe before the Conquest, (A. D. 1066,) were calculated by means of the abacus, or counting board. The Normans

improved the form by ruling a table in squares or "chequers," hence the term, "exchequer" became applied to national finances. The person who made the calculations was called the *teller*, and coins were used as counters. It is easy to see how one vertical row of squares was made to represent the places of farthings, another of pence, another of shillings, another of pounds, and another of tens of pounds, etc., and how examples in addition and subtraction could be easily performed.

Accounts were kept by merchants in Roman numerals until the close of the sixteenth century, although the Arabic figures were introduced into England about the year 1253. The abacus was used to a great extent in England for the purpose of calculation, at least fifty years after the landing of the Pilgrims in 1620.

At the Norman conquest the "tally" system of keeping accounts was introduced from Normandy, in France. It received its name from the French word, *tailler*, to cut. Square "tally-sticks" of hazel or alder were prepared, and the account was kept by notches cut on the stick in Roman numerals. The stick was then split longitudinally, leaving notch-marks on each half. One part was given to the credito and the other part was kept by the debtor. When the stick was presented by any person, if it "tallied" or fitted the other part, the claim was admitted, and when paid the stick was preserved as proof of payment. This system of keeping accounts survived the introduction of Arabic numerals in Europe about 670 years. The "tally-sticks" of the English Government were not destroyed until the burning of the Houses of Parliament in 1834.—*Educational Calendar.*

VOX POPULI.

A CORRESPONDENT in Minnesota sends us the following extracts from the examination papers of an applicant for a First Grade certificate in that state. He is now a county superintendent, having been elected to the office by a vote of the people! Truly, the cause of sound learning in that county must be in the enjoyment of a flattering prospect. We give the whole, *verbatim, et liberatim, et punctuatim.* As the law of the state providing for the election of county superintendents by the people fixes no standard of qualification for the office, "the good time coming" appears already to have come there. Verily, is not this a land in which suffrage is universal and ignorance a prime qualification for educational office?

Question. What causes originate the Gulf Stream, and determine its velocity and direction?

Answer. The causes are (1) The rotation of the earth on its axes, the Equatorial heat, Expansion compression of the watter. The direction are generally Westward.

Question. Describe two animals peculiar to Africa, and mention its characteristic animals.

Answer. Hippopotimus they live mostly in water. Giraffe, tall animals used generally in crossing the desert.

Question. Describe the vegetation, and mention the animals of the Arctic zone.

Answer. The Vegitations of the Arctic circle are Linches mosses.

Bears.

Question. Describe the position and direction of the longest straight line that can be drawn on the Eastern continent.

Answer. from the first meridian one the equator taking the given meridian to the opposite same meridian. Keeping one the equator as it is the greatest distance from the center of the earth.

Question. In what zone is Iceland; what can you say of the nationality, religion, education, and habits of its people, and of the physical features of the country?

Answer. Iceland is in the Frigid zone Most Esquamoax laplanders, They no christian religion, no education to speak of, no schools, fishing is the chief pursuit. It is very cold an Island.

Question. Are the plural forms, fishes, armies, councils, collective nouns? what reason for your answer?

Answer. They are Collective nouns, are more objective than one taken as one or used in the sence of one.

Question. To what is a^0 equal, and why?

Answer. $a^0=1$, according to (Ax—7) Thing that are equal to any other thing is equal to each other.

Question. Find the product of $x+4y$ by $x-4y$, and state the theorem illustrated.

Answer. $(x+4y)\times(x-4y)=x^2-16y^2$ squar the first quantity, squar the 2nd term multiplied by first, squar the second.

Professor Barbour, of Yale, told the Connecticut Teachers' Association, the other day, that not every dull recitation is to be laid to the charge of the scholar. The teacher, the school committee, the town, or some one else away out in the domain of secondary causes, may be chargeable for the failure. The teacher should be the head of the school in good spirits as well as good conduct. Let every teacher try it. Begin the school as if you had just heard good news and took pleasure in imparting it, and keep this up all day. Those whom we teach have a right of an intelligent handling of the mind and inviting it to study. The powers of the mind in learning are, first, detecting difference; second, observing sameness; and third, retaining what is seen. These, however, cannot be exercised all at once, and yet how often are the retentive powers put to work, while the observative and discriminating powers are kept standing by idle. The heedless handling of the mind is not yet over with. I maintain the right of the taught to such a quality in the teacher's character as will command their respect. The one who is in charge of the mind to lead it into knowledge will only fail, if at every turn of the way, he cannot show himself the master. If a teacher fails in trying to explain a study to his pupil, he instructs that pupil no longer. If the narrow and selfish mind is discernible, the taught see it as soon, yes, sooner than others. "Let no man despise thee," was Paul's advice to Timothy. The taught have a right to the absence of a suspicion of questionable proclivities in their teachers. How are the taught to be led into doing, if the teacher balks at the alphabet of the lesson? There is a hidden truth which makes the taught perceive the worth of his teacher. Knowledge itself is an instrument merely, and as ready to serve wrong as right. What is wanted is a training that will operate upon habit. The school is emphatically a great training school of manner, in perseverance, in punctuality, in veracity. There is an ethical training in the very discipline of the school. Moral harangues need not be frequent. Not the seeming, but the being is the hidden force that compels the taught to own the genuine worth of the master.

A MODEL PRIMARY SCHOOL.

IT IS at Elgin, Kane county, Ill. The teacher is Miss Eva L. Lamming, a graduate of the Elgin High School. She has not taught long, and never attended a normal school nor visited a primary school outside of the city. She arrives at the school-room promptly on time, is good-natured, dresses neatly, speaks kindly to all, moves about the school-room quietly and gracefully, and seldom sits down. Pupils come in promptly at ringing of the bell; the teacher stands at the door; pupils come in singly, quietly, so quietly that before one is aware the school-room is full of pupils in their places. There are no meaningless delays; each understands the other well; teacher sits and reads about five short verses of Scripture, each pupil being seated at the end of the seat, erect, with hands clasped upon the desk directly in front, giving attention to what the teacher distinctly, and yet in a low tone, reads. At the close of the reading, *all* rest the head upon the hand, covering the eyes, with elbows upon the desk; teacher and pupils *all* recite in a way that means something the Lord's Prayer,—a full, distinct tone throughout the room—the teacher at times not reciting, that the independent voices of the children may be heard. The first position is promptly resumed, the roll-call follows at once, the children promptly responding to the teacher's announcement of "number;" few absences, no cases of tardiness, though the rain is pattering upon the roof; a bright little song breaks suddenly upon the ear like the sparkling sunbeam through the clouds. The teacher says "one," the right hand down; "two," the left comes down; "three," the slate comes quietly from under the desk; it comes quietly, because care and system were exercised when it was placed there last night. The slates are all covered, many home-made covers. "Four," slates placed upon the desks, almost literally without any noise, None wait to be told to commence work; black-boards all around the room, well filled with work for the children, placed there last night by the teacher, ten minutes copying, studying, quietness, no recitations.

Promptly at 9: 20 teacher says in a very low voice, "t," pupils turn; "r," pupils rise and step into the middle of the aisle, forming a straight line, two aisles full on one side of the room; "m," the file at the left march and the second column file in the rear and come to place in front, forming a straight line. Slates left at the desk. The recitation is in reading and writing numbers from one to one hundred. The little fellows have attended school but a few weeks, but the lesson is well learned. These little five-year olds have studied their lessons with just as much earnestness as a class in their teens are expected to study in preparing a lesson in history. They do not turn round in their seats, nor laugh, nor raise their hands and snap their fingers, nor step off from the line, nor answer without permission. The teacher says; "Jane, go to the board and point to figure 8, number 18; how do you write ten, twenty-five, etc." The numbers are arranged in regular order in columns of ten. The exercise to be appreciated must be witnessed.

Let us make our primary schools good, then our intermediate and high schools will be better, and the discipline and culture obtained there will improve the standard of our citizenship. A. H. P.

THE RECITATION AND ITS OBJECT.—II.

I BELIEVE it requires much wisdom and judgment to know the extent and the limit of profitable explanation without detriment to the pupil's thought. And this suggests a duty of the teacher which is far greater and more necessary, and that is *how* to teach pupils to think. It may, I think, be done in the class-room. There are certain and successive steps that lead to conclusions, and the pupils should be taught these. The more active minds being given the first steps, will reach the height at a bound, losing intermediate steps which may be of essential importance in solving other problems; others require a helping hand to the very last. To most minds, to think out a problem, or to think on some abstruse statement, means to stare at it and repeat it over and over, conscientiously but hopelessly. The idea has not come to them that certain paths lead to certain places. When a pupil has made the discovery and knows the arcanian steps, he has a more valuable acquisition than the contents of a library would be. The following seems a common complaint: "My class will not think, they are completely at sea when they are submitted to an examination on particular examples or principles that they have not already known."

Have they been taught to think? If not, what else can be expected? If we have made storehouses of brains, the brains are not to blame if an article is called for that has never been stored there. But if we make them factories —teaching processes and furnishing material or showing where it may be obtained, we have a right to expect that some articles will be made to order.

But the imparting of knowledge, including all that has been said thus far in this essay of its reception and expression, is not the only important object of a recitation. The requiring of correct and concise answering inculcates a habit of truthfulness and exactness in all departments of speech. The very distinctness required in utterance gives a zest and interest to general conversation or to any public effort. The grace of courtesy and the charm of politeness can be engrafted or encouraged through the precepts and example of the teacher. Respectful obedience to the teacher and courteous treatment of school-mates being insisted on, the young Americanism of slang and impudence would soon give place to a manly chivalry and womanly nobility which would far exceed the deference and servility of the old pedagogical days. A true teacher finds time and means without encroaching upon the duties of the vocation to inculcate a love for the pure, noble, and good, and a reverence for the right and divine.

The crown and glory, however, of a teacher's duty lies in the personal interest taken in each pupil. In this, I believe, is the secret of successful teaching. There are teachers, scholars in every sense of the word, who are wedded to the subjects of which they treat; in recitation they are wholly absorbed in the question before them, and it seems to matter little to them whether an automaton or human being does the reciting, provided the recitation is made. Others are impatient, careless, and anxious only for immediate results. The dull and slow of the class have to give place to the quick, (especially if visitors are in). Many a slow intellect ceases to act; many a dormant ambition sleeps forever for want of a patient, friendly hand to spur to action or rouse to grand possibilities, One of the requisites for a teacher's certificate should be the possession of a heart—a warm heart but a strong one strengthened by wisdom and judgment. The brilliant pupils should feel the joy of the teacher, but also the steady, guiding hand. The dull and slow should expand and quicken under the loving eye discerning their various needs, and the careless and conceited should feel that the restraining and pruning hand is impelled by a wise and generous heart.

I have purposely avoided all allusions to the mechanical part of the recitation; whether a class should walk or march into the class-room; whether they should sit or stand; and the hundred and one minutiæ which some regard as the *sine qua non* of all teaching.

These seem to me arbitrary, depending largely on individual taste and ability.

A. A.

TEACHERS' SCRAP BOOK.

WE WONDER how many of our teachers keep and *use* scrap books. Not bulky, unwieldy folios, filled with thrilling stories or sentimental poetry, but small books easily carried, in which you paste such scraps of information, hints as to methods of work, apt illustrations, or anything you may chance to find which will be a help to you in the school-room, or in your preparation for the work to be done there. Few things are more useful to a teacher than such a book; if you once try keeping one you will never wish to do without it.

There are two advantages arising from this plan: one, the obvious one of having always at hand the useful items you have gathered; the other, though not as obvious, is quite as great. The formation of the habit of being ever on the lookout for anything bearing on our profession is of itself an invaluable aid. We always see what we are looking to see.

If you have never tried keeping such a book begin at once. Don't choose a large book, for it will be so unwieldy you will not use it as often as you should, and don't wait until you can arrange your scraps all in "apple-pie order," for you will never find time for that, but commence right away, paste in the first useful hint you find, then the next, and the next, and so on. Of course it would be nice if we could have all our scraps scientifically arranged and indexed; but life—especially a teacher's life—is too short and too busy for that.

A good way is to have several little scrap books, each devoted to some particular subject. For example, I keep one for items bearing on the financial and legal part of my work; another for general facts, such as teachers and scholars ought to know, and a third in which are teaching exercises and illustrations for use in the class room. Several exercises given at the drill, which proved especially popular with the teachers, were taken from this scrap book. —*Mary Allen West.*

I give one-fourth day each week to composition exercise. The pupils are provided with paper and pencil, several subjects are placed upon the blackboard, and every pupil required to write all he can on *one* subject. The subjects are selected so that all pupils are able to write. The following were used last week: Maple sugar making, ghosts, telling stories, faces, domestic animals, rats, peanuts, observatons in a railroad car. During this exercise the strictest order is observed. Pupils that experience difficulty, write their subjects, and then are aided by the teacher, who is constantly among them. He does not write, however, but suggests what may be said on the several subects, and aids them to form the first sentence. The writing continues just one hour, when compositions are folded, superscribed, numbered, and handed to the teacher. The pupils then receive compositions of the previous week, and are required to correct the errors noted on the outside. Fifteen minutes is given, then the remaining fifteen minutes is given to the correction of mistakes which the pupils failed to rectify. This is done by placing the words and sentences on the board, and calling upon different members of the school for correction. The facility with which young pupils write after a few months' practice is surprising, and while it proves a profitable exercise, it is no less agreeable to the scholars.—*N. E. Journal of Education.*

Publishers' Department.

—H. B. Nims & Co., whose advertisement of the Franklin globes appears in our columns this week, have long enjoyed a national reputation, and can be relied upon with confidence to do promptly everything which they promise.

—By oversight, the article on Class Tactics in this week's Practical Hints and Exercises is not credited, as it should be, to the *American Journal of Education.*

NEW ADVERTISEMENTS THIS WEEK.

Prof. Lodeman's European party.
Sanford's Inks, Sanford Manufacturing Co.
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Butler's Literary Selections, J. H. Butler & Co.
Home Arts, Alfred L. Sewell.
January *Atlantic*, H. O. Houghton & Co.
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Pennsylvania School Journal, J. P. Wickersham.
Lancaster School Mottoes, J. H. Butler & Co.
THE EDUCATIONAL WEEKLY, S. R. Winchell & Co.

It is a pity there are not more educational periodicals like THE EDUCATIONAL WEEKLY. Your editorials strike home,—your ideas are of and for *to-day*. They are not stuck in a fog bank of old theories and fixed conditions. You don't walk in the smooth, much-trampled road of the mere theorist, to whom the school, the pupil, the patron, each element of educational condition and influence, is ideal—schools and children and parents—all, what the brain of the theorist thinks they should be and therefore must be. Your editorials indicate that you see the school's condition as it is—children as they are, and patrons and teachers of schools as they are, and you propose to reach and supply wants as they exist, and not as you imagine they should exist. I like your journal because its editorials are full of practical common sense, the rarest of all human virtues.—*Hon. Chas. S. Smart, State Commissioner of Common Schools, Ohio.*